

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: J. Prudent *et al.*

Serial No.:

Group No.:

Filed:

Examiner:

Entitled:

INVASIVE CLEAVAGE OF NUCLEIC ACIDS

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, D.C. 20231

CERTIFICATE OF MAILING UNDER 37 C.F.R. § 1.10

I hereby certify that this correspondence (along with any referred to as being attached or enclosed) is, on the date shown below, being deposited with the U.S. Postal Service as "Express Mail Post Office to Addressee" under Express Mail Label No. EL 837 033 131 US in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231.

Dated: October 18, 2001

By:


Susan M. McClintock

Sir or Madam:

IN THE SPECIFICATION

Prior to the prosecution of the present case, please make the following deletions and additions. A clean version of the pending claims with instructions for entry pursuant to 37 C.F.R. §1.121 (c)(1)(i) is included below.

On page 1, please delete the paragraph between the Title of the Invention and the Field of the Invention and replace it with the following paragraph:

The present application is a Continuation of co-pending U.S. Appln. Ser. No. 09/350,309, filed July 9, 1999, which is a Divisional of U.S. Appln. Ser. No. 08/756,386, filed November 29, 1996, now U.S. Patent No. 5,985,557, which is a Continuation-In-Part of U.S. Appln. Ser. No. 08/682,853, filed July 12, 1996, now U.S. Patent No. 6,001,567, which is a Continuation-In-Part of U.S. Appln. Ser. No. 08/599,491, filed January 24, 1996, now U.S. Patent No. 5,846,717.

The invention was made with government support under Cooperative Agreement 70NANB5H1030 awarded by the Department of Commerce, National Institute of Standards and Technology, Advanced Technology Program and Grant No. DE-FG02-94ER81891 awarded by the Department of Energy. The Government has certain rights in the invention.

IN THE CLAIMS:

Please cancel Claims 1-25.

Please add the following Claims:

26. A method for detecting the presence of a target nucleic acid molecule by detecting non-target cleavage products comprising:
- a) providing:
 - i) a cleavage agent;
 - ii) a synthetic target nucleic acid, said synthetic target nucleic acid comprising a first region and a second region, said second region downstream of and contiguous to said first region;
 - iii) a first oligonucleotide, wherein at least a portion of said first oligonucleotide is completely complementary to said first portion of said first target nucleic acid;
 - iv) a second oligonucleotide comprising a 3' portion and a 5' portion, wherein said 5' portion is completely complementary to said second portion of said target nucleic acid;
 - b) mixing said cleavage agent, said synthetic target nucleic acid, said first oligonucleotide and said second oligonucleotide to create a reaction mixture under reaction conditions such that at least said portion of said first oligonucleotide is annealed to said first region of said target nucleic acid and wherein at least said 5' portion of said second oligonucleotide is annealed to said second region of said target nucleic acid so as to create a cleavage structure, and wherein cleavage of said cleavage structure occurs to generate non-target cleavage product; and
 - c) detecting the cleavage of said cleavage structure.

27. The method of Claim 26, wherein said detecting the cleavage of said cleavage structure comprises detecting said non-target cleavage product.

28. The method of Claim 26, wherein said synthetic target nucleic acid comprises an amplified nucleic acid.

29. The method of Claim 28, wherein said amplified nucleic acid is produced using a polymerase chain reaction.

30. The method of Claim 26, wherein said detecting the cleavage of said cleavage structure comprises detection of fluorescence.

31. The method of Claim 26, wherein said detecting the cleavage of said cleavage structure comprises detection of mass.

32. The method of Claim 26, wherein said detecting the cleavage of said cleavage structure comprises detection of fluorescence energy transfer.

33. The method of Claim 26, wherein said detecting the cleavage of said cleavage structure comprises detection selected from the group consisting of detection of radioactivity, luminescence, phosphorescence, fluorescence polarization, and charge.

34. The method of Claim 26, wherein said first oligonucleotide is attached to a solid support.

35. The method of Claim 26, wherein said second oligonucleotide is attached to a solid support.

36. The method of Claim 26, wherein said cleavage agent comprises a structure-specific nuclease.